DOCUMENT RESUME

ED 261 969 SE 045 996

TITLE Instructional Material for Forestry Judging. Revised 1984. Bulletin 1697.
INSTITUTION Louisiana State Dept. of Education, Baton Rouge. Div. of Vocational Education.
PUB DATE 84
NOTE 23p.
PUB TYPE Guides - General (050)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Agricultural Skills; *Competition; *Forestry; Map Skills; Natural Resources; State Programs; *Trees; *Youth Agencies
IDENTIFIERS *Future Farmers of America; *Louisiana

ABSTRACT

This document serves as a study guide for Louisiana's Future Farmers of America (FFA) is preparing for area and state forestry contests. General contest rules and competition section sub-rules are provided for the participants. Information and directives are outlined on specific topics. They include: (1) tree identification (with an index of Louisiana's commercially used trees); (2) timberstand improvement and/or thinning (including a study guide and contest sub-rules); (3) tree measurement (emphasizing measurement of standing trees); (4) compass pacing (explaining the nature and procedures of pacing); (5) map reading (containing legal descriptions); and (6) a site index (listing contest rules and providing a score sheet). (ML)

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INSTRUCTIONAL MATERIAL

FOR

FORESTRY JUDGING

Bulletin 1697

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INSTRUCTIONAL MATERIAL

FOR FORESTRY JUDGING

Revised 1984

BULLETIN

1697

ISSUED BY

VOCATIONAL AGRICULTURE/AGRIBUSINESS SECTION
BUREAU OF VOCATIONAL EDUCATION
ELAINE WEBB, Ed.D.
ASSISTANT SUPERINTENDENT

THOMAS CLAUSEN, Ph.D., SUPERINTENDENT
LOUISIANA DEPARTMENT OF EDUCATION

F.F.A.

Forestry Judging Contest

Scientific management of Louisiana's forest lands can ensure the future generations of this state a bounty of forest products, outdoor recreation, wildlife, and soil and water shed protection.

The forest lands of Louisiana provide the raw material for this state's most important industry, the Wood Using Industry. Therefore, we feel that FFA members should have a knowledge of some of the practices used in the management of timber.

Through this contest we hope you will gain an interest in the forests of your state, the south, and the nation, as you enjoy the atmosphere of competition while applying your new-found skills.

Initial Study Guide prepared by:

Billy Dark	Pineville Kraft, Pineville, LA
Jimmy Leachman	International Paper Co., Natchez, MS
Wayne Plummer	International Paper Co., Camden, AK
John Reed	Olinkraft, Inc., Monroe, LA
Don Smith	Southern Forest Institute, Atlanta, GA
Roland Treubig	Louisiana Forestry Commission, Woodworth, LA
Ralph Wall	Louisiana Forestry Commission, Baton Rouge, LA

Assisting in the Revised Study Guide are the following:

Jim King	Office of Forestry, Woodworth, LA
Bob Watts	Office of Forestry, Woodworth, LA
Jimmy Culpepper	Office of Forestry, Baton Rouge, LA
Denver Martin	J. K. Martin Pulpwood Co., Winnfield, LA

FORESTRY JUDGING CONTEST

General Contest Rules

1. General Rules applicable to other state contests will apply.

2. All contestants must be bona fide FFA members.

3. A team will be composed of three or four members. If a team chooses to use four members the low total individual score will be deleted from the total team score. All other scores will be counted for teams with three members. No other alternates will be allowed.

4. No team will be eligible to enter the competition after the contest has started.

5. Score sheets must be given to the individual in charge of each event before the contestant leaves the event area.

6. Awards will be presented to the first, second, third, and fourth place winners in the Area and State Contests. Individuals on the first place team in the State Contest will be ineligible to compete in this contest in succeeding years.

7. The first place team from the State Contest will be eligible to compete in the National FFA Forestry Contest in Kansas City beginning in 1985.

8. The top three placing teams in the State Contest will be eligible to compete in the Southern States' Forestry Contest.

9. The Louisiana FFA Forestry Judging Contest will be divided into five sections for the Area and six sections for the State.*

   A. Tree Identification, B. Timber Stand Improvement (TSI), C. Measurement of Standing Trees-Sawtimber, D. Measurement of Standing Trees-Pulpwood, E. Compass Pacing Practicum.

10. The State Contest will include the five sections in the area contest and one practicum from either (A) Map Reading, or (B) Site Index Practicum.

11. The contest should be completed in two and one-half hours for the Area Contest and three hours for the State Contest. The Southern States' Forestry Contest is three hours.

12. The following material will be necessary: clip board or writing board, compass, pencil, tree scale stick. (Calculators will not be permitted in the contest.)

*NOTE: The first place team in the State Contest will adhere to the rules, regulations, and study guides set forth by the National FFA Forestry Contest when representing the state in the national competition.

13. The contest location will be identified prior to the contest.

14. The official study guide for the Tree Identification section will be Commercial Trees of Louisiana, Bulletin No. 10, Fourth Edition, 1964, by Claire A. Brown.

15. No talking is allowed during the contest.

16. No smoking is permitted during the contest.

NOTE: Tree Scaling sticks may be purchased from:

Forestry Suppliers, Inc.
Box 8397
205 West Rankin Street
Jackson, Mississippi 39205-0397

Tree and Log Scale Stick (Doyle Scale)

Stock #59750

Sub-Rules

Tree Identification

1. Commercial Trees of Louisiana, by Claire A. Brown, shall be the study guide.

2. Ten species will be selected from the study guide. All of the species in the guide will not be used; only the species listed on the index sheet attached to the TREE IDENTIFICATION SUB-RULES will be eligible for use.

3. Contestants will be given 40 seconds to identify each standing live specimen and record the information on the score sheet. Moving time from tree to tree will not be considered contest time.

4. Four points will be given for the correct common name and three points given for the correct botanical name. The common and botanical names must be the ones listed in this study guide or attached index. The entire common name as listed in the index must be used to be counted correct. One point will be given for each correct characteristic classification.

5. One point will be deducted for each common name and one point for each botanical name (genus or species) misspelled.

6. Contestants must print the common and botanical names.

7. The tree identification is the same for the Southern States Forestry Contest.

IDENTIFICATION OF COMMERCIAL TREES OF LOUISIANA

Knowledge of the commercial trees of Louisiana is important to every person of the state. If we are to appreciate the contributions trees make to the economy and the beauty of our state, it is essential that we gain knowledge of the trees' characteristics to include growth, leaf, stem, flowering habits, and the natural growth area within the state.

In order to make this contest as nearly authoritative and of the most value in increasing the students' knowledge of commercial trees, live plant materials (in the field or classroom), supplemented by slides and photographs, should be used for study and will also be used for identification in the contest.

The booklet, Commercial Trees of Louisiana, by Claire A. Brown, will be used as a study guide. Ten species selected from the attached index will be used in the contest. However, the official common names and correct spelling will be used from this study guide.

INDEX

PLANT NUMBER	COMMON NAME	BOTANICAL NAME	PRIMARY USE
1	Eastern Redcedar	Juniperus virginiana	C
2	Shortleaf Pine	Pinus echinata	C
3	Slash Pine	Pinus elliottii	C
4	Longleaf Pine	Pinus palustris	C
5	Loblolly Pine	Pinus taeda	C
6	Baldcypress	Taxodium distichum	C
7	Eastern Cottonwood	Populus deltoides	C
8	Black Willow	Salix nigra	C
9	Pecan	Carya illinoensis	C
10	American Beech	Fagus grandifolia	C
11	White Oak	Quercus alba	C
12	Southern Red Oak	Quercus falcata	C
13	Overcup Oak	Quercus lyrata	C
14	Blackjack Oak	Quercus marilandica	C
15	Swamp Chestnut (Cow Oak)	Quercus michauxii	C
16	Water Oak	Quercus nigra	C
17	Nuttall Oak	Quercus nuttallii	C
18	Cherrybark Oak	Quercus pagodaefolia	C
19	Willow Oak	Quercus phellos	C
20	Shumard Oak	Quercus shumardii	C
21	Post Oak	Quercus stellata	C
22	Sugarberry (Hackberry)	Celtis laevigata	C
23	Winged Elm	Ulmus alata	C
24	American Elm	Ulmus americana	C
25	Osage Orange (Bois D'arc)	Maclura pomifera	C
26	Red Mulberry	Morus rubra	W
27	Southern Magnolia	Magnolia grandiflora	A
28	Sassafras	Sassafras albidum	W
29	Sweetgum	Liquidambar styraciflua	C
30	American Sycamore	Platanus occidentalis	C

PLANT NUMBER	COMMON NAME	BOTANICAL NAME	PRIMARY USE
31	Black Cherry	Prunus serotina	W
32	Eastern Redbud	Cercis canadensis	A
33	Honey Locust	Gleditsia triacanthos	W
34	Black Locust	Robini pseudoacacia	C
35	American Holly	Ilex opaca	A
36	Red Maple	Acer rubrum	C
37	Flowering Dogwood	Cornus florida	A
38	Water Tupelo	Nyssa aquatica	C
39	Black Tupelo (Black Gum)	Nyssa sylvatica	C
40	Common Persimmon	Diospyros virginiana	W
41	White Ash	Fraxinus americana	C
42	Black Walnut	Juglans nigra	C
43	Yellow Poplar	Liriodendron tulipifera	C
44	Bitternut Hickory	Carya cordiformis	C

ONLY THESE TREES WILL BE CONSIDERED.

C - Commercial

W - Wildlife

A - Aesthetic

SCORE SHEET-(SAMPLE)

TREE IDENTIFICATION

CONTESTANT'S NAME _____ CONTESTANT'S NUMBER _____

SCHOOL _____

(Print all names)

No.	4 Points Common Name	3 Points Botanical Name	1 point (Check correct one.) COMMERCIAL	WILDLIFE	AESTHETIC

CONTESTANT'S SCORE _____

TIMBERSTAND IMPROVEMENT (TSI) AND/OR THINNING
SUB-RULES

1. Up to 30 trees will be selected and designated for use in this part of the contest. The trees may be all of one species or a mixture of species.

2. An area of up to 30 feet in radius will be selected and identified by ribbons, paint, rope, etc. It will contain at least 15 and not more than 30 trees that will represent a timberstand that needs thinning or some T.S.I. work. The trees will be numbered one to 30 or up to the number of trees used. (If it happens that an area selected and marked off has a few more than 30 trees, the trees not needed for this phase will be marked by an "X" and will not be considered for evaluation.)

3. All trees, with the exception of any "X" trees, in the selected area will be considered as a forest management site, and each tree will be scored by the contestants using one of the following options:
   a. Cut - (Thin out or harvest the tree.)
   b. Leave - (Tree should remain in stand for a good reason.)
   c. Deaden - (Undesirable tree, not merchantable or beneficial to wildlife, should be deadened or cut down)

4. The contestants will be given a "situation" concerning the forest management objectives of the stand selected. Information that will be needed to help contestants in their decisions will include the following:
   a. Markets available--(including hardwood),
   b. Wildlife habitat considerations--(scope, etc.),
   c. Present condition of stand, and
   d. Final goal of the management plan.

   This information will be given to contestants at the site before they start evaluation of the stand orally, by poster or a "hand-out" sheet.

5. Two points will be allowed for each correct decision up to a total of 60 points, depending on the number of trees in the radius. (The possible score for this phase of the contest will vary.)

6. Contestants will be given 30 minutes to make their decisions in this segment of the contest.

TIMBERSTAND IMPROVEMENT (TSI) AND/OR THINNING
STUDY GUIDE

PURPOSE — Exercising proper judgement in removing poor quality trees from timber stands at the opportune time is essential to the overall health, vigor, and value of your forests. It allows land owners a larger return on investments.

THINNING — You should thin (cut) overstocked woods or those that are becoming crowded in order to give the remaining trees more space in which to grow in size and value.

METHOD

1. Determine which species of trees (pine, red oak, white oak, and so forth) you want to leave.
2. Select those "leave" trees on a basis of condition, value, size, vigor, spacing, and importance to the wildlife habitat.
3. Remove trees that are overtopped by others, damaged, diseased, deformed, stagnated, or the poorest of a crowded group that are poorly spaced.

T.S.I. Timberstand improvement will eliminate woody vegetation, undesirable species, and commercially culled trees that prevent or restrict the growth and development of desired trees in forage plants. Only those trees that are harmful to the orderly execution of your management plan should be deadened. Often low grade or undesirable species of hardwood can be sold. This approach should be considered with the assistance of a forester before T.S.I. work is started. Also, some culled trees and low quality species may be considered from the wildlife standpoint.

SCORE SHEET (SAMPLE)
TIMBERSTAND IMPROVEMENT (TSI) AND/OR THINNING

CONTESTANT'S NAME _____ CONTESTANT'S NUMBER _____

SCHOOL _____

(Circle One Choice.)

TREE NO.				TREE NO.			
1.	CUT	LEAVE	DEADEN	16.	CUT	LEAVE	DEADEN
2.	CUT	LEAVE	DEADEN	17.	CUT	LEAVE	DEADEN
3.	CUT	LEAVE	DEADEN	18.	CUT	LEAVE	DEADEN
4.	CUT	LEAVE	DEADEN	19.	CUT	LEAVE	DEADEN
5.	CUT	LEAVE	DEADEN	20.	CUT	LEAVE	DEADEN
6.	CUT	LEAVE	DEADEN	21.	CUT	LEAVE	DEADEN
7.	CUT	LEAVE	DEADEN	22.	CUT	LEAVE	DEADEN
8.	CUT	LEAVE	DEADEN	23.	CUT	LEAVE	DEADEN
9.	CUT	LEAVE	DEADEN	24.	CUT	LEAVE	DEADEN
10.	CUT	LEAVE	DEADEN	25.	CUT	LEAVE	DEADEN
11.	CUT	LEAVE	DEADEN	26.	CUT	LEAVE	DEADEN
12.	CUT	LEAVE	DEADEN	27.	CUT	LEAVE	DEADEN
13.	CUT	LEAVE	DEADEN	28.	CUT	LEAVE	DEADEN
14.	CUT	LEAVE	DEADEN	29.	CUT	LEAVE	DEADEN
15.	CUT	LEAVE	DEADEN	30.	CUT	LEAVE	DEADEN

TWO POINTS FOR EACH CORRECT ANSWER

CONTESTANT'S SCORE _____

TREE MEASUREMENT DIVISION
SUB-RULES

1. A standard tree scale stick will be used. These may be purchased from Forestry Suppliers, Inc., Box 8397, Jackson, Mississippi 39204.

2. Ten trees will be selected and designated for use in each part, sawtimber, and pulpwood estimating. These 10 trees will represent the volume on a one-quarter acre plot. You will be required to give to total volume on one acre assuming the quarter acre is representative of the whole acre.

3. Teams will be given a maximum of 30 minutes for each part, as defined above.

4. Each member of the team will estimate each tree. All values will be recorded. Tree diameters will be taken to the nearest inch. Tree height will be taken to the nearest half-log and nearest 4-foot pulpwood stick. A half-log is defined as being 8-feet long. The minimum log tree will be 10 inches D.B.H. and one log merchantable. The minimum top dimension for pine will be 8 inches, and the minimum top dimension for hardwood will be 10 inches. The minimum pulpwood tree will be 5 inches D.B.H. and 12-feet merchantable.

5. Each tree volume will be found in the volume tables (Table I and Table II) which will be located on the judging cards. Record sawlog volumes as found in the table. Total the 10 sawlog volumes after all trees have been estimated and multiply by four to find the total volume on an acre. Total the 10 pulpwood cubic foot volumes after all trees have been estimated and multiply by four to find the total cubic feet on an acre. Divide cubic feet by 90 to obtain cords. Carry out division to the nearest one-hundredth of a cord.

6. Two points will be awarded for each correct D.B.H., two points for the number of 16-foot logs, and one point for volume. No points will be allowed for any incorrect measurement or volume. The perfect total score will be 50 points for each part.

7. Thirty bonus points will be allowed for the correct volume per acre in both pulpwood and sawtimber estimating. Bonus points will be allowed as follows:
   Sawtimber--30 points for correct volume, (5 points will be deducted for each 2½ percent plus or minus from the correct measured volume);
   Pulpwood--30 points for the correct volume, (5 points will be deducted for each 2½ percent plus or minus from the correct measured volume).
   Remember--the total volume will be the volume on the representative one acre.

8. Each contestant will turn in his score sheet when either time runs out or he finishes each part, before starting the other part.

9. No calculators can be used in this contest.

MEASUREMENT OF STANDING TREES
STUDY GUIDE

PURPOSE — Standing trees are measured to obtain an estimate of the amount of the various forest products which might be cut from the tree. This is done to have an idea of what volume is present. Most timber sales are based on volume. All forest properties must have some estimate of total volume, volume per acre, and volume by product so that the forest manager can decide the course of his future actions.

PRODUCTS — Forest products that may be measured are poles and piling, saw logs, veneer logs, pulpwood, and fence posts.

METHOD — Since all trees are basically a part of a cylinder, they have diameter and height which may be measured. Diameter of standing trees is measured, by time-honored custom, at 4½ feet above ground on the uphill side of the tree. This is abbreviated as D.B.H. (diameter breast high). The way to determine diameter will be explained in detail later. Height of a standing tree might be measured as total, the entire height from ground line to the top, or merchantable. This is a variable point depending on the product that might be cut. If a tree might make a pole or piling, the height used will be measured in feet, by multiples of 5 feet. The top diameter is fixed by certain specifications. If a tree is to be cut into logs, the lengths cut will vary depending on the demand of the mill to which the logs will go. This is true of saw logs as well as veneer logs. As a result, total merchantable length will vary. But as a rule, one may say that a pine tree suitable for logs will have a top limiting diameter of 8 inches. However, this point may be where excess limbs, called a whorl, or forks exist that will prevent closer use of sawlogs. A whorl for this contest will be when three or more limbs encircle a tree with at least one of the limbs having a 3-inch diameter at the trunk of the tree. Hardwood trees have a top limiting diameter of 10 inches. Trees to be cut for pulpwood have a top limit of 4 inches outside bark. While the top diameter for posts is 3 inches, in general, some 2½-inch top posts may be cut.

TOOLS — To measure diameter, one may use a caliper, diameter tape, or tree scale stick. Since the tree scale stick is to be used in the contest, the method of using it will be explained. (See sub-rules for where to buy the stick.) The following sketch shows how the tree scale stick is used to obtain tree diameter.

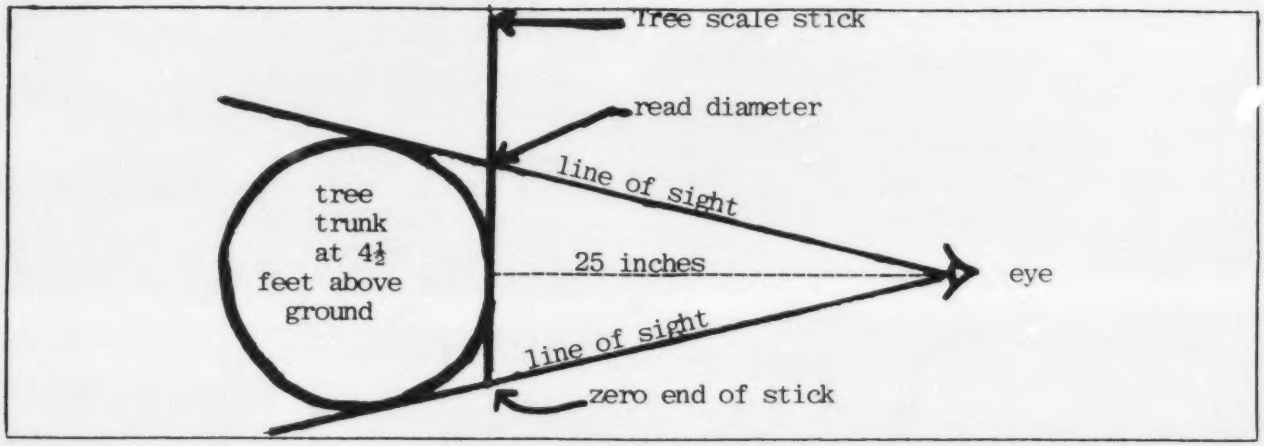

FIGURE 1. Method of using tree scale stick to obtain tree diameter. DO NOT MOVE HEAD, JUST EYE.

Use the flat side of the stick, indicated "Diameter of Tree (in inches)." Hold the stick level at 25 inches from the eye, against the tree, and at a height of 4½ feet above the ground. Practice is needed to find both the 4½-foot point in relation to your height, and the 25-inch distance to your eye. When the stick is placed against a tree, close one eye, and sight at the left or zero end. This and the tree bark should be in the same line. Now, DO NOT MOVE YOUR HEAD. Just move your eye across the stick to the right-hand edge of the tree. Read the tree diameter to the nearest inch. It is necessary to hold the stick at a right angle to the tree.

Height, or number of 16-foot logs for this contest, is measured as follows: Pace out 66 feet from the base of the tree to a point where the entire tree can be seen. Hold the stick so that the "Number of 16-foot logs" side faces you. The zero end should point toward the ground. Plumb the stick, at 25 inches from the eye. Sight the zero end to appear to rest on the stump. DO NOT MOVE YOUR HEAD. Run your eye up the stick to the point where the top of the last merchantable cut would be made in the tree. Read sawlogs to the nearest one-half log. Read pulpwood to the nearest 4-foot section.

Practice on pacing is needed to find the 66-foot point. The distance from eye to stick is still the same as in measuring tree diameter.

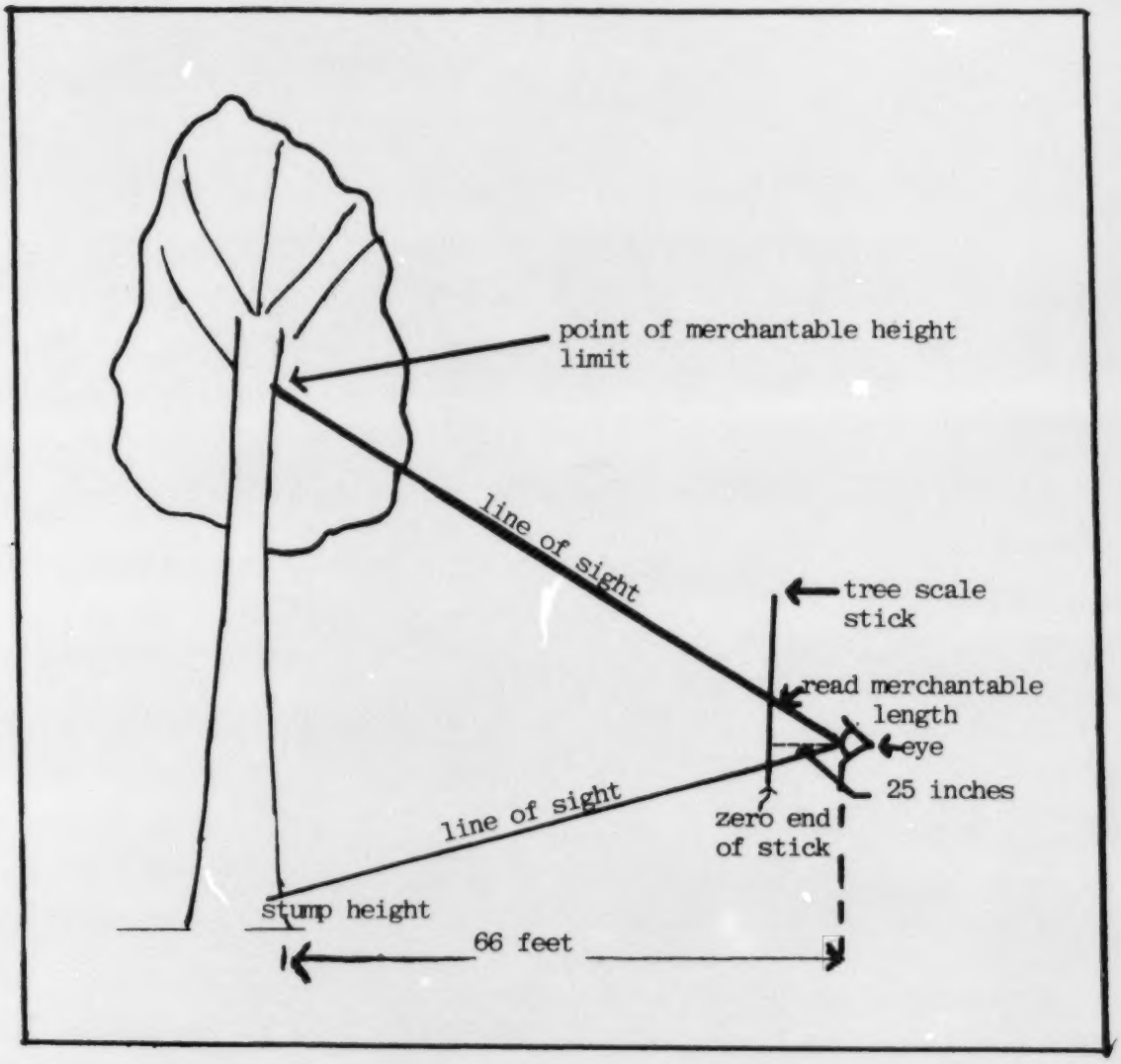

FIGURE 2. Method of using tree scale stick to obtain merchantable height. DO NOT MOVE HEAD, JUST EYE.

Occasionally a stand of young trees is so dense that the 66-foot distance is too far to see clearly the tree being measured. In this case, use a 25-foot distance from the tree with the 25-inch distance from eye to stick. Now use the inch scale on the opposite edge of the stick (marked "diameter of log"). Sight with the zero at stump height and without moving your head, run your eye up the inch scale to find the merchantable length. At this 25-foot distance, with the 25-inch eye-to-stick distance, one inch on the stick equals one foot on the tree.

Special note: Always remember that pine logs have a minimum 8-inch top diameter, hardwood logs have a 10-inch top diameter, and pulpwood has a 4-inch top. These diameters are not absolute. For example, a 20-inch tree is a single stem up to 30 feet, where it forks. No merchantable product exists above that point. Even though you estimate the diameter at 30 feet to be 10 inches, drop back to 24.

feet or one and one-half logs is necessary for our volume table calculations. Should there be usable logs above the fork (in 8-foot multiples), the total length to the top limiting diameter is measured as though there were one single stem. The volume by diameter and total merchantable length is recorded. Do not attempt to try to scale the tree in any other way. In cases of doubt, ask for the assistance of a forester.

VOLUME TABLES

This is a composite of actual values on an average basis for the product indicated. Once the tree measurement is determined, enter the appropriate table from the left with the tree diameter (D.B.H.). Move across to the right to the column containing tree merchantable height at the top. At the intersection of these two points will be that tree's volume.

Sawlog trees will range from a minimum of 10 to a maximum of 30 inches D.B.H. The table shows number of logs by half-log intervals from one to five logs. Read and record each tree volume directly and separately. For contest purposes, do not use the volume on the tree scale stick.

Pulpwood tree volumes are shown for trees from 5 to 12 inches and from 12 to 64 feet merchantable. The volume is in cubic feet. This is recorded on the contest score sheet for each tree measured. In order to find the number of cords, divide the total cubic foot volume by 90. The unit of measurement for a standard cord of rough wood is 128 cubic feet. When you divide the sum of the cubic foot volume by 90, you will determine the number of standard cords that you have measured.

Use Table I for pulpwood and Table II for sawlogs for study purposes. These exact tables are found on the back of the score card for the pulpwood and sawlog sections.

TABLE I
CUBIC-FOOT VOLUME TABLE (including bark)
Average - Southern Pine

D.B.H.	MERCHANTABLE LENGTH (in feet)													
Inches	12	16	20	24	28	32	36	40	44	48	52	56	60	64
5	1.2	1.6	2.0	2.4	2.8									
6	1.6	2.2	2.7	3.2	3.8	4.3	4.8							
7	2.1	2.8	3.6	4.3	5.0	5.7	6.4	7.1						
8	2.3	3.6	4.6	5.5	6.4	7.3	8.3	9.1	10.1	11.0				
9		4.5	5.7	6.8	8.0	9.1	10.2	11.3	12.5	13.6	14.7			
10			6.8	8.2	9.5	10.8	12.3	13.6	14.9	16.3	17.7	19.0	20.4	
11				9.6	11.6	12.8	14.4	16.0	17.6	19.2	20.8	22.4	24.0	25.6
12				11.2	13.0	14.9	16.7	18.6	20.5	22.3	24.2	26.0	27.9	29.8

Source: U. S. Forest Service. Odd diameters calculated.

TABLE II
DOYLE LOG RULE
Form Class 80

VOLUME (Board Feet) BY NUMBER OF 16 FOOT LOGS

D.B.H. Inches	1	1½	2	2½	3	3½	4	4½	5
10	16	20	23	24	26				
11	24	30	35	38	42				
12	31	39	47	52	57	60	62		
13	42	53	64	72	80	84	88		
14	52	67	82	93	104	109	114		
15	64	84	104	118	132	141	150		
16	77	101	125	143	161	174	186		
17	92	122	152	175	198	214	230		
18	108	144	179	206	234	254	273		
19	126	168	210	244	278	301	324		
20	144	193	242	282	321	348	374	396	417
21	164	221	278	324	370	403	436	462	489
22	185	250	315	368	420	458	497	529	561
23	208	282	356	417	478	521	564	604	643
24	231	314	397	466	536	583	630	678	725
25	256	350	443	522	600	655	710	764	818
26	282	386	489	576	663	727	791	852	912
27	310	425	540	638	735	806	877	946	1015
28	339	466	592	700	807	885	963	1040	1118
29	370	509	648	766	884	970	1056	1144	1232
30	400	552	703	832	961	1055	1149	1248	1346

SOURCE: U. S. Forest Service

SAMPLE: _____

CONTESTANT'S NAME _____ CONTESTANT'S NUMBER _____

SCHOOL _____

Sawlog Score Sheet

TREE NO. No.	D.B.H.	#16 ft. Logs	Board Feet	Value

Total Volume in Board Feet per Acre _____

Total Value per Acre _____

CONTESTANT'S SCORE _____

SAMPLE:

CONTESTANT'S NAME _____ CONTESTANT'S NUMBER _____

SCHOOL _____

Pulpwood Score Sheet

TREE NO.	D.B.H.	HEIGHT	VOLUME	

Total Volume in Cubic Feet per Acre _____

Cords per Acre _____

Total Value per Acre _____

CONTESTANT'S SCORE _____

Sub-Rules

COMPASS PACING

1. The student will use a hand compass and pacing to simulate the determination of property lines on a tract of timber. The compass course will have 5 marked points. The student will start at point 1 and record the compass reading and distance in feet to point 2. The contestant will do the same from point 2 to point 3 and so on. The compass reading shall be in degrees. Declination will not be considered.

2. Thirty minutes will be provided for this portion of the test.

3. A total of 50 points is possible, 10 points for each numbered site. Five points will be awarded for correct bearing or azimuth and 5 points for correct distance. Partial credit will be given, with a deduction of 1 point for each 2 degrees or 2 feet the contestant is off the correct answer.

4. The Silva Ranger Compass will be the official compass for the contest. Other compasses may be used.

5. The judge or person preparing this event will inform the contestants from which side of the stake and/or tree the reading was made.

PACING

What is pacing?

Accurate pacing is a knack that all students of forestry and other people working with land measurements must master.

Pacing is as simple as walking and counting; actually that's all it is, just walking and counting. The definition of a pace for the purpose of land measurement is, if you start off on the left foot, when your right foot hits the ground, you have gone one pace. Count every time your right foot hits the ground thereafter. This gives you the number of paces you take.

When learning to pace, remember to walk naturally; do not extend your stride and do not shorten it; just walk as you do normally. Remember, pacing is counting every other step.

Why learn pacing?

In Louisiana, land is for the most part divided into sections, townships, and ranges; there are, however, some Land Grant parcels in the State. Let's concern ourselves with the section. The section ordinarily contains 640 acres that are usually broken down into sixteen 40-acre blocks. When the land was surveyed and broken down into sections, the measurement the surveyors used was the "chain." A chain is 66 feet in length. It is composed of 100 links of 7.92 inches each, so 100 links equals one chain. A section is one-mile square; there are 80 chains in a mile, so each side of the normal section is 80 chains.

A 40 is one-quarter of a mile square, so each side of a normal 40 is 20 chains.

80 chains = 1 mile
40 chains = ½ mile
20 chains = ¼ mile
1 chain = 66 feet
100 links = 1 chain

If you learn how many paces you take to cover one chain, you can approximate measurements of land.

How do you learn to pace?

1. Measure a one-chain (66') course.
2. Decide which foot you are going to start off on; toe the mark and start. It's always best to use the same starting foot.
3. Let's say you start off with your left foot; every time your right foot hits the ground, count.
4. Repeat the course several times to be sure.
5. Don't practice too closely behind another person; it may affect your pace. Most people take about 12 paces to the chain. Remember to walk naturally.

There are times when you may have to adjust your pace--for example, in heavy brush, going up and down steep inclines, or jumping streams, etc.

Pacing is a handy art to be familiar with in hunting, estimating land distance or in many other outdoor uses. A forester uses it in the crusing of timber, which is the estimation of volume on tracts of timber. Familiarize yourself with pacing and notice how often you rely on it.

CONTESTANT'S NAME _____ CONTESTANT'S NUMBER _____

SCHOOL _____

SCORE SHEET

COMPASS PACING

	PART A		PART B	
POINT	BEARING	SCORE	DISTANCE	SCORE
1				
2				
3				
4				
5				
	A -Score		B - Score	

CONTESTANT'S SCORE (A & B)_____

STATE CONTEST PRACTICUMS

MAP READING - LEGAL DESCRIPTIONS

RULES

1. Contestants will be furnished a map with specific points marked for identification. The student shall write the legal description or location of the 10 land parcels. The parcel size shall be no less than 40 acres. (Example: NW 1/4 of SW 1/4, S16, T4N, R2E)

   NW - Northwest
   SE - Southeast
   S - Section (640 acres)
   T - Township
   R - Range
   1/4 - Quarter of a section (160 acres) or a quarter of a greater (40 acres of the 160)

2. Thirty minutes will be allowed for this section.

3. Five points will be awarded for each correct land parcel. All answers must be correct; no partial credit will be given.

CONTESTANT'S NAME _____ CONTESTANT'S NUMBER _____

SCHOOL _____

MAP READING--LEGAL DESCRIPTIONS

SCORE SHEET

LAND PARCEL	DESCRIPTION (5 POINTS EACH)	SCORE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

CONTESTANT'S SCORE _____

SITE INDEX

Site Index is an expression of forest site quality based on the height of the dominate stand at an arbitrary age.

RULES

1. The contestant will measure the total height (from ground level to top of the crown) and age of 3 dominate and/or co-dominate trees in the prescribed stand. The contestant will then take an average of the 3 readings of height and age and record the index reading. The ages of the trees will be determined by counting the tree rings on the cross-section provided.
2. Contestants will be allowed 30 minutes for this part of the contest.
3. Site Index curves and tables for the species being judged will be provided for the contestants.
4. A maximum of 50 points is allowed for this section. There are three parts to score.
   Part A--TREE HEIGHTS--will have a total value of 20 points. Two points will be deducted for each foot off of the correct average height.
   Part B--TREE AGES--will have a total value of 10 points. Two points will be deducted for each year of age off of the correct average age.
   Part C--SITE INDEX--will have a total value of 20 points. Four points will be deducted for each number off correct index.

CONTESTANT'S NAME _____ CONTESTANT'S NUMBER _____

SCHOOL _____

SCORE SHEET

SITE INDEX

PART A (20 Points) TREE HEIGHTS		PART B (10 Points) TREE AGES		PART C (20 Points) SITE INDEX
Tree	Height	Tree	Age	
1		1		
2		2		_____ Index
3		3		Score _____
Total Height		Total Age		(4 points deducted for each number off correct index)
Average Height		Average Age		
Score		Score		

(2 points deducted for each foot off correct height)

(2 points deducted for each year off correct age)

CONTESTANT'S TOTAL SCORE _____

(Part A, Part B, and Part C)